Leave blank

4. Use the standard results for summations to

(a) show that for all positive integers k

$$\sum_{r=1}^{3k}(4r+1) = pk(2k+1)$$

where p is an integer to be determined,

(3)

(b) find the positive value of k that satisfies

$$\sum_{r=1}^{k}2r^2 = \sum_{r=1}^{3k}(4r+1)$$

(3)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Leave blank

Question 4 continued

Q4

(Total 6 marks)